

Appl. No.: 10/796,375
Docket No.: 347269-991360
Response to Office Action of September 20, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. (currently amended) A display apparatus comprising:
a substrate, the substrate having a reflective region, a transmissive region, and an interface region located between the reflective region and the transmissive region;
a transparent electrode;
a liquid crystal layer located between the substrate and the transparent electrode, ~~the liquid crystal layer having a reflective region, a transmissive region, and an interface region located between the reflective region and the transmissive region;~~
a thin film transistor ~~that is electrically coupled to the transparent electrode through an electrical coupling in the interface region~~ comprising a gate electrode, a source electrode, and a drain electrode, wherein the gate electrode is located in the reflective region, and wherein one of the source electrode and the drain electrode extends from the reflective region to the interface region to form an interface electrode that is electrically coupled with the transparent electrode.
2. (original) The apparatus of claim 1 further comprising a reflective electrode positioned in the reflective region and the interface region, wherein the reflective electrode is electrically coupled to the thin film transistor in the interface region.
3. (currently amended) The apparatus of claim 2 further comprising an organic layer positioned between the reflective electrode and the thin film transistor such that the organic layer

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forms a sidewall in the interface region, wherein the reflective electrode covers the sidewall and a portion of the organic layer in the reflective region.

4. (currently amended) The apparatus of claim 3, wherein the transparent electrode covers the transmissive region, the sidewall, and a portion of the organic layer in the reflective region.

5. (original) The apparatus of claim 4, wherein the transparent electrode is located between the reflective electrode and the thin film transistor.

6. (original) The apparatus of claim 3, wherein the organic layer has a patterned surface and the reflective electrode is conformally coated on the patterned surface.

7. (original) The apparatus of claim 3, wherein the transparent electrode is in the reflective region, the transmissive region, and the interface region, and wherein the transparent electrode in the reflective region is covered by the organic layer.

8. (original) The apparatus of claim 2, wherein the reflective electrode comprises at least one of a silver layer, a silver alloy layer, a molybdenum-tungsten alloy layer, and an aluminum-neodymium layer.

9. (canceled)

10. (currently amended) The apparatus of claim 9 1, wherein the interface electrode is shaped and positioned to prevent light leakage in the interface region.

11. (currently amended) The apparatus of claim 9 1, wherein the interface electrode extends across the interface region.

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12. (currently amended) The apparatus of claim 9 1, further comprising a signal line that forms a border with the reflective region, the transmissive region, and the interface region, wherein the interface electrode is located at the border.

13. (currently amended) The apparatus of claim 9 1, wherein ~~the~~ a shape and a position of the interface electrode are adjusted according to a rubbing direction ~~for~~ of the apparatus.

14. (original) The apparatus of claim 1, wherein the reflective region and the transmissive region are located in a pixel region of the apparatus that is defined by signal lines.

15. (original) The apparatus of claim 1 further comprising a color filter coupled to one of the substrate and the transparent electrode for filtering light of a predetermined wavelength range.

16. (original) The apparatus of claim 1, wherein the reflective region has a first cell gap and the transmissive region has a second cell gap, and wherein the second cell gap is approximately twice as large as the first cell gap.

17. A display apparatus comprising:

a first member including a first substrate;

a second member including:

a second substrate having a reflective region for reflecting light and a transmissive region for transmitting light;

~~a thin film transistor formed in the reflective region of the second substrate;~~

a transparent electrode deposited on the second substrate;

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a thin film transistor formed in the reflective region of the second substrate, the thin film transistor comprising a gate electrode, a source electrode, and a drain electrode, wherein the gate electrode is located in the reflective region, and wherein one of the source electrode and the drain electrode extends from the reflective region to the interface region to form an interface electrode that is electrically coupled with the transparent electrode;

an organic layer deposited on the second substrate, the organic layer having a first thickness in the reflective region and a second thickness in the transmissive region, wherein a sidewall having a height that is approximately equal to a difference between the first thickness and the second thickness forms in an interface region between the reflective region and the transmissive region, and wherein the thin film transistor is electrically coupled to the transparent electrode in the interface region; and

a liquid crystal layer located between the first member and the second member.

18. (canceled)

19. (currently amended) The apparatus of claim ~~18~~ 17, wherein the interface electrode is shaped and positioned to reduce light leakage in the interface region.

20. (currently amended) The apparatus of claim ~~19~~ 17, wherein a shape and a position of the interface electrode ~~is determined by~~ are adjusted according to a rubbing direction of the apparatus.

21. (original) The apparatus of claim 17 further comprising a reflective electrode deposited on the organic layer in the reflective region.

22. (currently amended) An array substrate for a display device, comprising:

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a substrate having a reflective region, a transmissive region, and an interface region between the reflective region and the transmissive region;

a thin film transistor formed in the reflective region, the thin film transistor comprising a gate electrode, a source electrode, and a drain electrode, wherein the gate electrode is located in the reflective region, and wherein one of the source electrode and the drain electrode extends from the reflective region to the interface region to form an interface electrode;

an organic layer formed in the reflective region over the thin film transistor, the organic layer forming a sidewall in the interface region; and

a transparent electrode deposited over the thin film transistor, ~~coupled to the thin film transistor in the interface region~~ the thin film transistor electrically coupled with the interface electrode.

23. (currently amended) The array substrate of claim 22, wherein the transparent electrode covers a portion of the organic layer in the reflective region.

24. (currently amended) The array substrate of claim 23 further comprising a reflective electrode deposited on the organic layer in the reflective region, the reflective region electrode being electrically coupled to the transparent electrode.

25. (currently amended) The array substrate of claim 22, wherein the organic layer covers a portion of the transparent electrode in the reflective region.

26. (currently amended) A method of making a display apparatus, the method comprising:

providing a substrate having a reflective region, a transmissive region, and an interface region between the reflective region and the transmissive region, wherein a thin film transistor is located in the reflective region, the thin film transistor having a gate electrode, a source

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electrode, and a drain electrode, wherein one of the source electrode and the drain electrode extends from the reflective region to the interface region to form an interface electrode;

forming an organic layer in the reflective region on the thin film transistor, such that the organic layer forms a sidewall in the interface region; and

depositing a transparent electrode on the thin film transistor such that the transparent electrode is coupled to the ~~thin film transistor~~ interface electrode in the interface region.

27. (original) The method of claim 26 further comprising depositing a reflective electrode on the organic layer in the reflective region.

28. (currently amended) The method of claim ~~27~~ 26, wherein the transparent electrode is deposited on the organic layer in the reflective region.

29. (original) The method of claim 26, wherein the organic layer is deposited on the transparent electrode in the reflective region.

30. (currently amended) The method of claim ~~25~~ 26 ~~further comprising forming an interface electrode in the interface region for electrically coupling the thin film transistor to the transparent electrode,~~ wherein the interface electrode is shaped and positioned to prevent light leakage in the interface region.

31. (currently amended) The method of claim ~~30~~ 26 further comprising adjusting a shape and a position of the interface electrode according to a rubbing direction of the display apparatus.

32. (currently amended) The method of claim ~~30~~ 26, wherein the interface electrode is formed by a separate process from the thin film transistor.

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33. (new) The apparatus of claim 13, wherein the interface electrode has a rectangular shape.

34. (new) The apparatus of claim 13, wherein the interface electrode has a triangular shape.

35. (new) The apparatus of claim 13, wherein the interface electrode has a L-shape.

36. (new) The apparatus of claim 31, wherein the interface electrode has a rectangular shape.

37. (new) The apparatus of claim 31, wherein the interface electrode has a triangular shape.

38. (new) The apparatus of claim 31, wherein the interface electrode has an L- shape.